HD CCTV
12X Optical Mini Speed Dome Camera
OPERATION MANUAL

Before installing and using the camera, please read this manual carefully. Be sure to keep it handy for later reference.

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CAUTION

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Use Class 2 Power Supply Only

Cautions

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions;

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense."

WARNING

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Caution

Any changes or modifications in construction of this devices which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

⚠ CAUTION ⚠

1. A regulated AC24V 2.5A(With Heater) power supply is recommended for use with this camera for the best picture and the most stable operation. An unregulated power supply can cause damage to the camera. When unregulated power supply is applied, product warranty will be out of subject.
2. It is recommended that the camera is used with a monitor that has a CCTV quality 75 video impedance level. If your monitor is switched to high impedance then please adjust accordingly.
3. Do not attempt to disassemble the camera to gain access to the internal components. Refer servicing to your dealer.
4. Never face the camera towards the sun or any bright or reflective light, which may cause smear on the picture and possible damage to the CCD.
5. Do not remove the serial sticker for the warranty service.
6. Do not expose the camera to rain or other types of liquid.
7. The apparatus must be connected to a mains socket-outlet with a protective earthing connection.

Cautions

Correct Disposal of This Product
(Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicate that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.
This product should not be mixed with other commercial wastes purchased this product, or their local government office, for details of where and how they can take item for environmentally safe recycling.
Business users should contact their supplier and check the terms and conditions of the purchase contract.
Household users should contact either the retailer where they for disposal.

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER. SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance

IMPORTANT SAFETY INSTRUCTION

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use attachments/accessories specified by the manufacturer.

12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

1. Overview

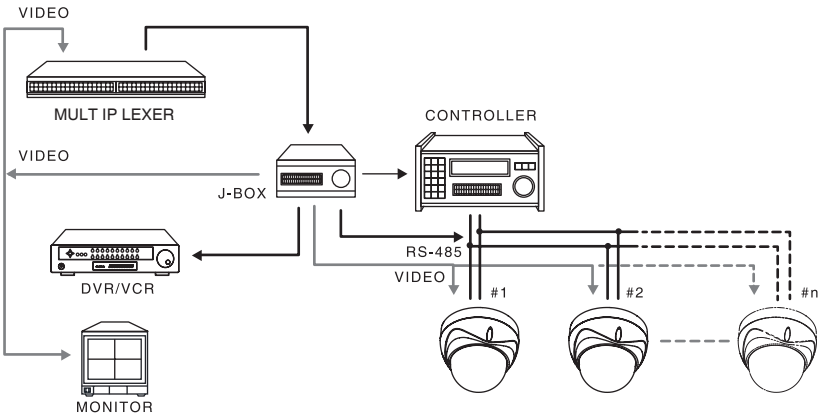
1.1 Features

The PTZ Dome shall be quickly to install and be able to offer the services described in this document by way of an interface unit.
Its mechanical architecture is designed to ensure adequate mechanical attachment to the wall of a dwelling. Details shall be provided as to how the PTZ Dome is to be installed.
A building block for any surveillance/security system is composed of PTZ domes and Controllers. Extensible and flexible configuration promotes remote control functions for various external switching devices such as multiplexers and DVRs

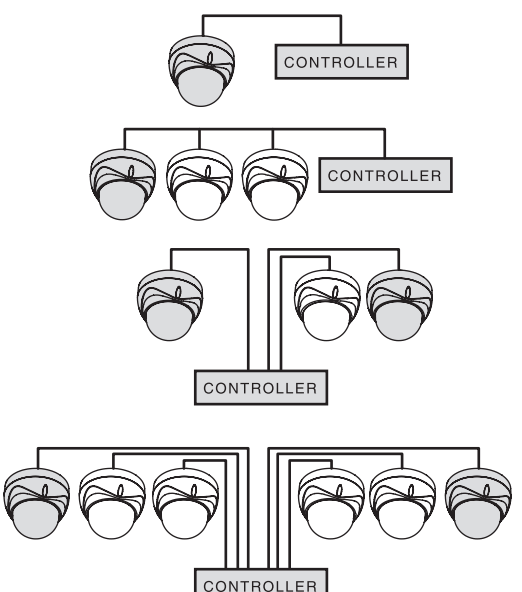
- Autofocus, High Resolution Integrated Color Camera
- 120X Zoom (12X Optical, 10X Digital)
- WDR (Wide Dynamic Range)
- BLC / HSBLC
- DNR (Digital Noise Reduction)
- Day & Night (Auto / BW / Color)
- Pan 360°Endless Rotation
- Tilt 180°Vector scan available
- 210 Preset Positions (except Short-cut command)
- 8 Auto Scan
- 6 Pattern
- 8 Tours consist of Presets, Patterns and Scans
- 4 Alarm Input (Off / NC / NO) and 1 Alarm Output (Off / NC / NO)
- User programmable setting
  (Preset, Auto scan, Pattern, Tour, Home Function, Alarm Action, etc)
- Programmable PTZ Speed: Proportional to Zoom ratio, changeable preset speed
- Multi-language OSD Support
- Private Mask Zone Support
- Standard protocol including Pelco-D/P
- Up to 255 Camera ID
- RS-485 Receiver
- AC 24V Only
- IP Rating: IP66 (Weatherproof)
- HDcctv Alliance Base Line Compliance
- The HDcctv Alliance states.
- Look for the unique HDcctv logo to be sure.
  - 100m transmissions over even to be sure.
  - Plug-and-Play interoperability with other compliant products.
  - Forward compatibility with future versions of the standard.
  - See www.hidefcctv.org for details.

1. Overview

1.2 System Configuration

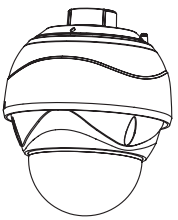
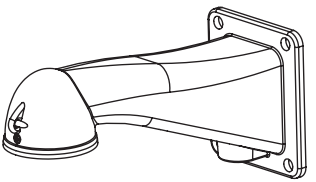
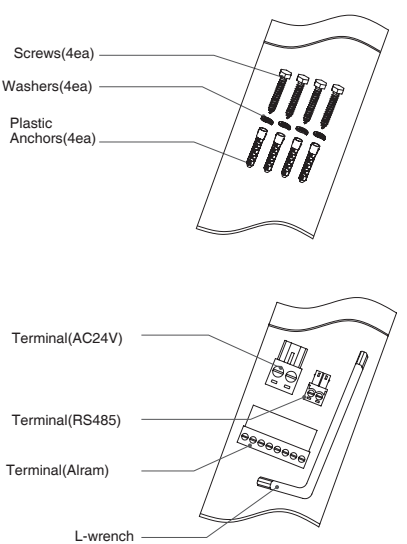


1.3 Termination Settings



2. Installation and Connection

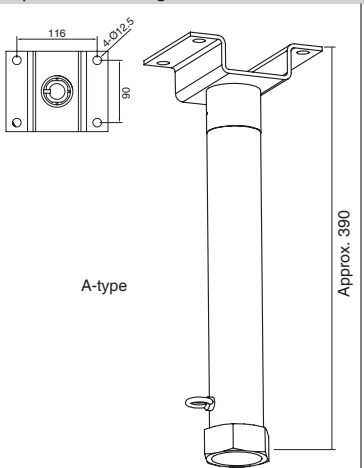
2.1 Package Contents

Camera	Wall Mount Bracket
	
Operation Manual	**Screws/Plastic Anchors/Wrench/Washers /Terminal(AC24V,RS485 and Alram)**
	

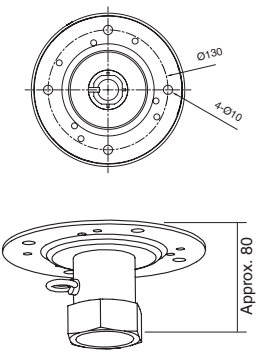
2. Installation and Connection

Unit: mm

Option - Ceiling Mount Bracket

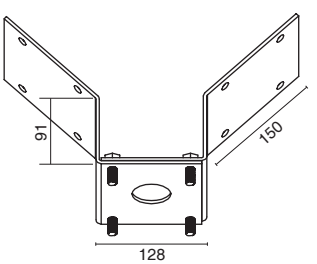


A-type

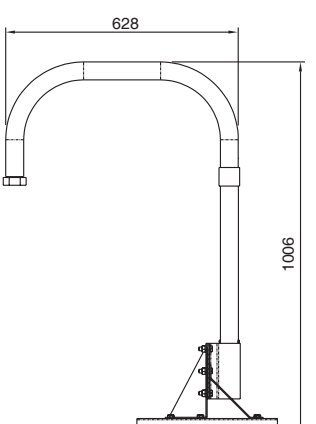


B-type

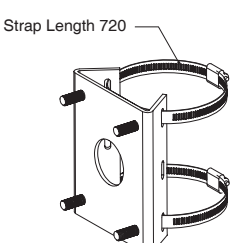
Option - Corner Mount



Option - Parapet Mount

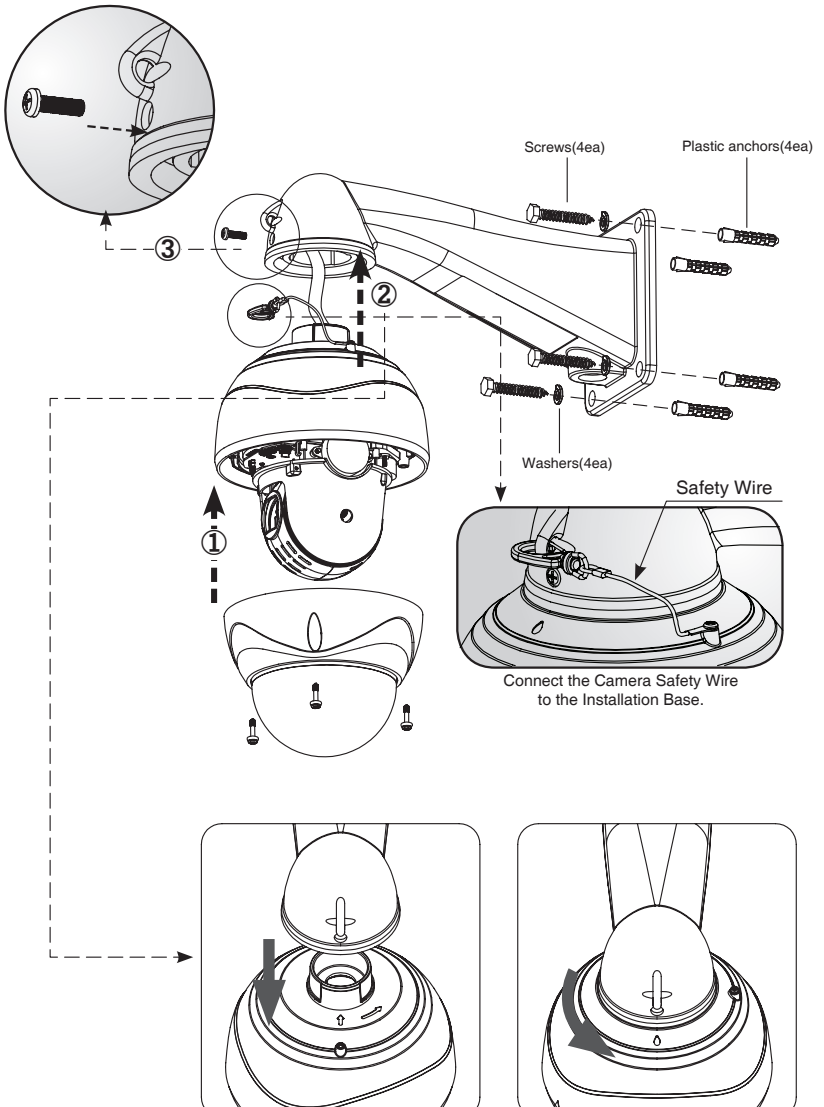


Option - Pole Mount



2. Installation and Connection

2.2 Installation



2. Installation and Connection

2.3 Connection Interface and Wiring cables

* Caution

Do not connect the power cable until all other connections have been completed.
After removing the protection sheet (PE form), supply the power to the dome camera.

2.3.1 Connecting the RS-485 lines

The dome camera can be controlled remotely by an external device or control system such as a controller using RS-485 half duplexer (RS-485 Connection). A repeater is recommended to extend over 1.2 Km.

2.3.2 Connecting Video Jack

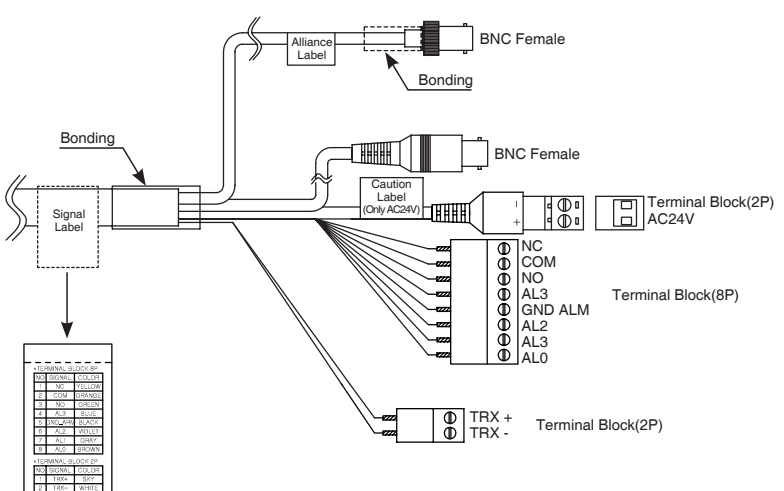
Connect the video Jack (BNC connector) to the monitor or video input of the DVR.
(Video for HDcctv)
Connect the video Jack (Yellow BNC connector) to the monitor or
video input of the DVR for checking only

2.3.3 Connecting Alarms

Alarm In: You can use external devices to trigger the dome camera to react to events
Mechanical or electrical switches can be wired to the AI and Ground pins
Alarm Out: The dome camera can activate external devices such as buzzer. Connect the device to NO (or NC) and COM pins.

2.3.4 Connecting the power

Connect the power jack of AC24V adaptor to the dome camera.



2. Installation and Connection

2.4 Setting Dome Camera

The device can communicate with external switching device such as multiplexer or DVRs by setting the Rotary switch and Dip switch. Refer to tables below for setting the dome camera ID and protocol selection. Total length of the cable for communication should not exceed 1km.

2.4.1 Setting the address (ID) of dome camera

To prevent wrong operation and malfunction, each dome camera has a unique address (ID).
The default setting is 0[ID001].
The value of rotary switch is in hexadecimal.
ex) SW301 : A, SW302 : F
0xAF => ID175
* Check appendix sheet

Dome Camera ID Setting (Rotary Switch, SW301, SW302)

X16	X1
SW301	SW302

2.4.2 Setting the protocol of dome camera

Dome Camera Protocol Setting (Dip Switch, SW303)

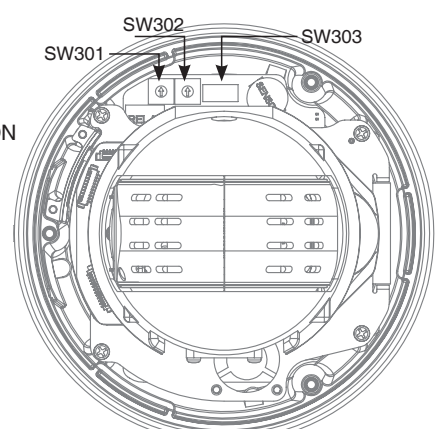
No1	CVBS
Off	NTSC
On	PAL

No2	Protocol
Off	Pelco D / P
On	Pelco P / Others

Dome Camera Baud Rate Setting (Dip Switch, SW303)

No3	No4	Baud Rate(bps)
Off	Off	2400
Off	On	4800
On	Off	9600
On	On	38400

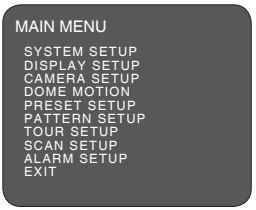
Dome Camera Termination Setting Off / ON (NO5, Dip Switch, SW303)

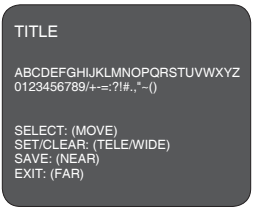


3. Program and Operation

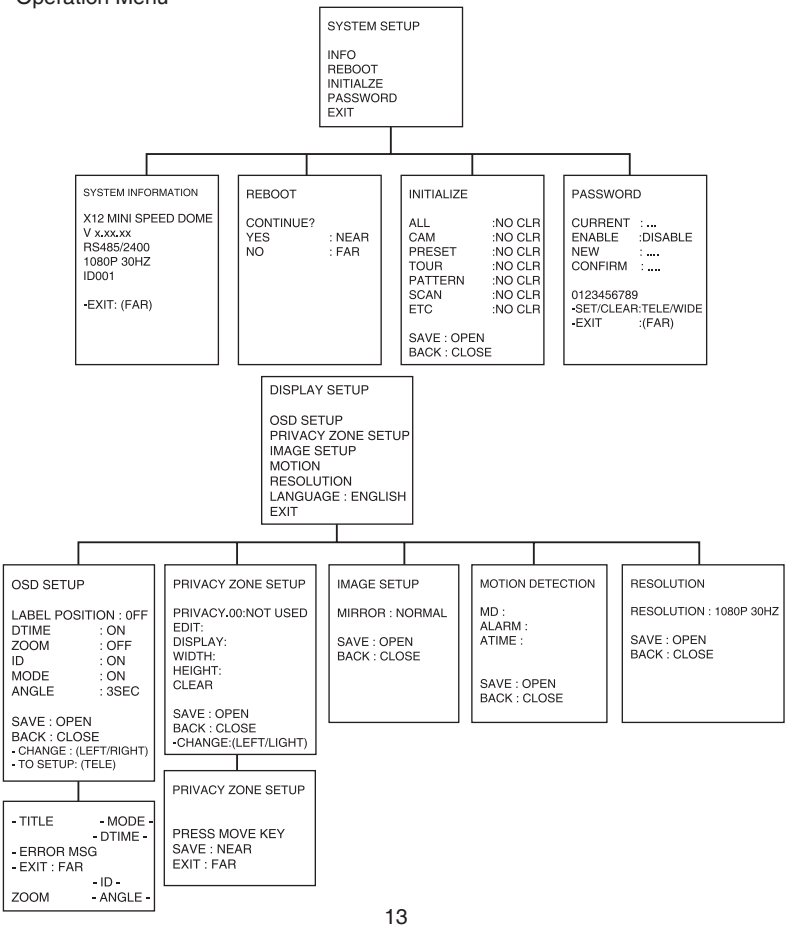
[OSD Menu Structure]

- Main Menu / Editing Title

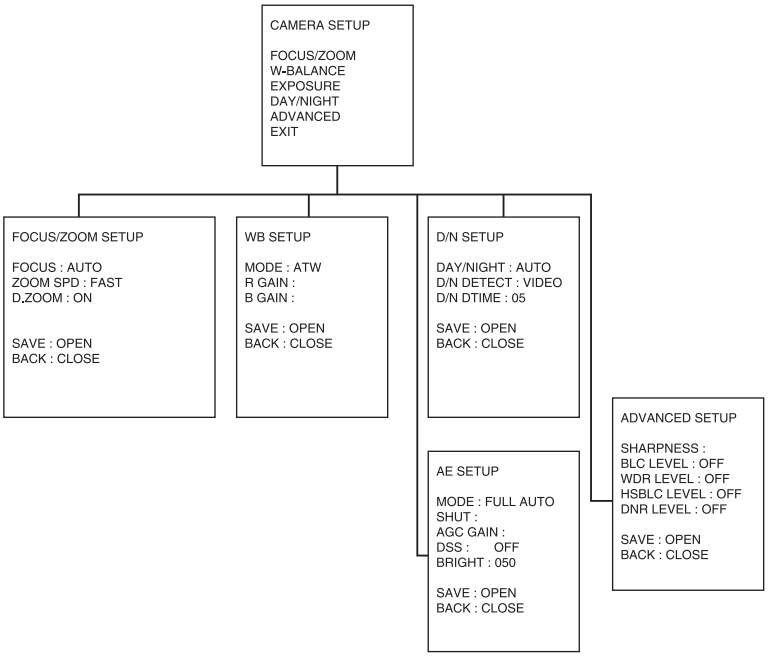


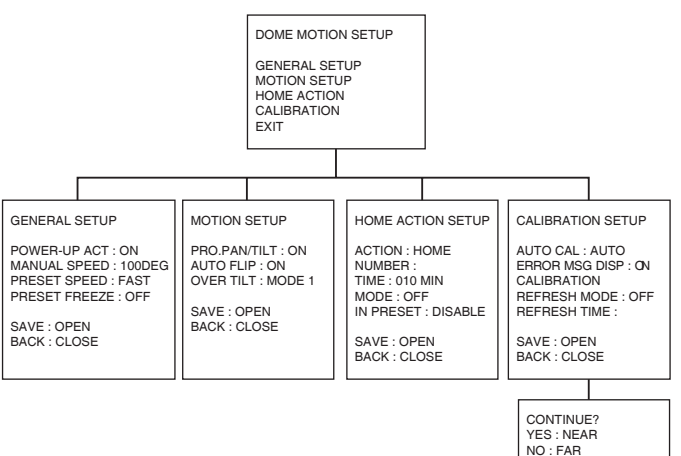


- Operation Menu

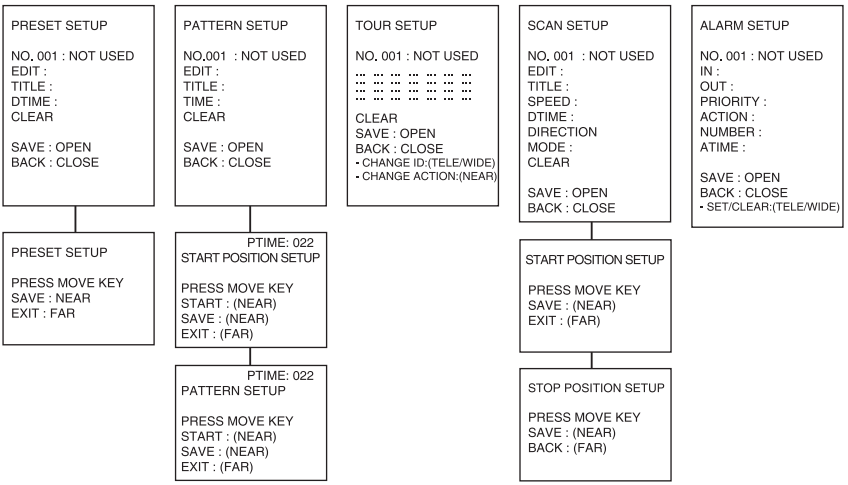


3. Program and Operation





3. Program and Operation



This manual is designed to be a reference for the programming and operation of the system. You can see information about features of the dome and commands as well as an operation method. The symbols below mean some action of the joystick controller.

▲ / ▼: move joystick up and down

◄ / ►: move joystick left and right direction

►: select or change values

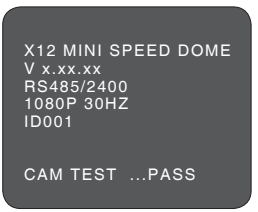
[Tele / Wide]: move joystick clockwise or counter-clockwise for zooming

[KEY]: press the defined key.

3. Program and Operation

3.1 Getting Started

You should install and connect the dome to an interface device before using this operating guide.
Refer to {2. Installation and connection of this manual}.
Once installed, apply power to the dome and the start-up screen is displayed on the monitor.



Before installing and operating the dome camera, please read this user's manual carefully.
This dome camera can be operated using two methods:

- Use hot keys [Refer to Appendix].
- Use OSD Menu on the monitor [Read this operation manual].

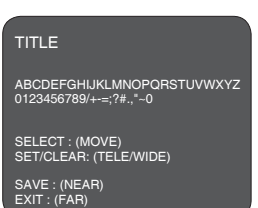
*** Notice: You shall check the saving state of each step at sub menu or edit menu, after editing functions or changing settings. You may save setting one function twice.** For example, after {the position or title of Preset} is saved at 'Sub Menu', {the status of Preset Setup} has to be saved at 'Preset Setup Menu' again.

*** Notice: To stop an action, press [ESC] button or [96+Preset]. In that case, the dome goes to manual mode or is to be paused temporarily (about 10sec in Alarm mode)**

3.1.1 ACCESSING MAIN MENU [95] + [Preset]/ [Menu]

When you use Pelco-D and Pelco-P protocol with your controller, you can access to the main menu on your monitor by pressing the key [95] + [Preset] or pressing and holding the [Menu] key for 2 seconds.

3.1.2 Editing TITLE

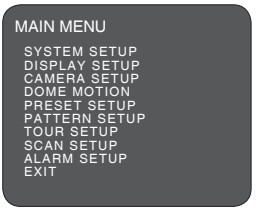


The title edit menu can be used in the setup for Preset / Pattern / Tour / Scan commonly.

- Move the joystick right in Main Menu. The screen appears on the monitor:
- Move the joystick right, left, up or down to select a character.
- Press [Tele] button to input a character and [Wide] button to cancel the character.
- When the label is completed, use [Near] or move the joystick to save the selected title.
- If you want to cancel the selected title, return to the previous menu using [Far] button.

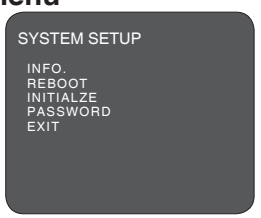
3. Program and Operation

3.2 Main Menu



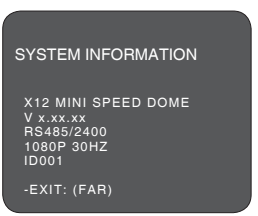
▲ / ▼: move joystick up and down for selecting an item.
◄ / ►: move joystick left and right for moving an item.
► / [Open] / [Near]: move joystick right to select or save values or go to edit pages.
► / [Close] / [Far]: move joystick to cancel or to exit current menu.
(Back to previous menu without saving)

3.3 System Setup Menu



▲ / ▼: move joystick up and down for selecting an item.
◄ / ►: move joystick left and right for moving an item.
► / [Open] / [Near]: move joystick right to select or save values or go to edit page.
► / [Close] / [Far]: move joystick to cancel or to exit current menu (back).

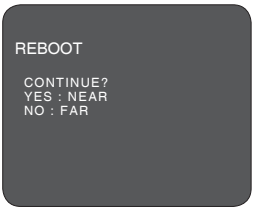
3.3.1 System Information



The system Information displays model name / Running Version / Protocol / Communication Type / Camera ID No. / System. It is read only for reference. Use the following steps to display the System Information screen: Camera ID changes with respect to ID switching setting

- Enter into {Main MENU}
- Select {System} using the joystick [►].
- Move the joystick right [►] for selecting {Info} in the sub menu of {System}.
- Press [Far] button or use joystick [►] to return to previous menu (Back).

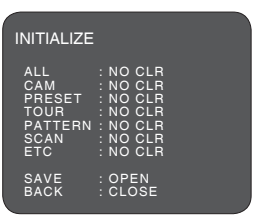
3.3.2 Reboot



Reboot the system if there are some anomalous problems to control or operate the domes.
Rebooting the system will recycle power of dome and camera without changing settings of dome.

- Enter into {Main Menu}
- Select {System) using joystick and move to {Reboot} in the sub menu of {System}
- To {Reboot} the system, Press [Near] key.
- To cancel Reboot, Press [Far] key.

3.3.3 Initialize

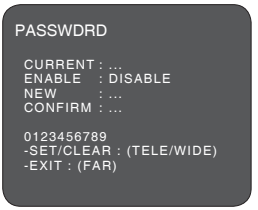


Use this function to initialize all or specific parameters of dome to factory default parameters.

- Enter into {Main Menu}
- Select {System} using joystick [▶] and move to {Initialize} in the sub menu of {System}
- Select items to be initialized.
- Press [Near] button or use joystick [▶] to select {Clear}
- Press [Far] button or use joystick [▶] to return to previous menu (back).

[ALL]: Clear All saved items (CAM / PRESET / TOUR / PATTERN / SCAN)
[CAM]: Clear Camera related settings.
[PRESET]: Clear saved presets. (To clear each preset, refer to PRESET Menu)
[TOUR]: Clear saved Tours.
[PATTERN]: Clear saved Patterns.
[SCAN]: Clear saved Scan items.
[ETC]: Clear other setting value except items of Camera & PTZs
(CAM status and saved data of PRESET, TOUR, PATTERN and SCAN)

3.3.4 Entering a Password



To prevent unauthorized changes to the dome settings, the dome have the feature of password protection. An unauthorized operator cannot access to any of the dome settings menus. The password must be entered before programming. The valid password with four characters must be entered to continue programming.

- Enter into {Main Menu} (refer to Accessing Main Menu)
- Select {System} and move to {Password} in the sub menu of {System} using joystick [▶].
- Select numbers using joystick left / right and press [Tele] key.
- To lock the password, set Enable: Enable

*** Note**: 0000 is the default password.

3.4 Display Setup Menu

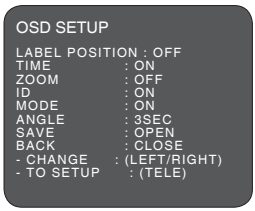
▲ / ▼: move joystick up and down for selecting an item.
◀ / ▶: move joystick left and right for moving an item.
▶ / [Open] / [Near]: move joystick right to select or save settings or go to edit pages.
▶ / [Close] / [Far]: move joystick to cancel or to exit current menu (Back).

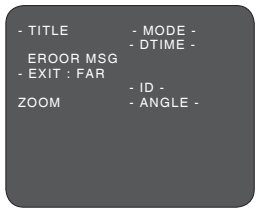
Enter into {Main Menu}: refer to {3.1.1 Accessing Main menu}.

3.4.1 Language

- Select {Display Setup} and move to {Language} using joystick [▶].
- If you want to use another language, select one from English / Chinese / Russian / Spanish / German / Italian / French / Netherlandish.

3.4.2 OSD Setup

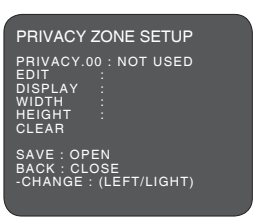


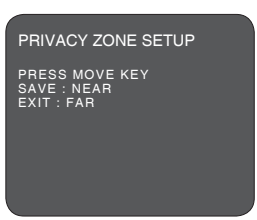


You can see only video or some character with video. Each element is able to handle.
OSD setup allows you to program how labels are displayed on the monitor.
Labels are such as Title, Dwell Time, Zoom ratio, Camera ID, Operation Mode and PTZ Angle
Label position can be set where you want to place on the monitor.

- Enter into {Main Menu}
- Select {Display} and move to {Setup} using joystick [▶]
- Use the joystick to move the label up, down, left, and/or right.
- Press [Tele] button to edit the position of labels.
- Move the joystick right [▶] to change the status of labels.
- Other labels can be set with same method.
- Press [Far] button to return the previous menu (OSD setup).
- Press [Open] button or use joystick to save the status.
- Press [Close] button or use joystick to return to previous menu (Back).

3.4.3 Privacy zone

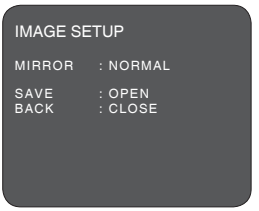




A Private mask zone allows an administrator to program one four-sided, user defined zone which cannot be viewed by operators. The mask can be changed with pan angle and tilt angle using joystick and be adjusted in size according to zoom ratio [Tele / Wide]. Maximum 15 positions can be displayed on the monitor screen. The speed of displaying masks is proportional to the number of masks on the screen. It is recommended that you set the size to at least twice the size of the object (height and width)

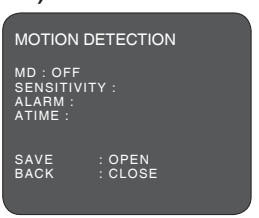
- Enter into {Main Menu}
- Select Display and Privacy Zone using joystick [▶].
- Move the joystick left or right to select zone ID[00~14].
- To program a Privacy Zone, select Edit Mask, move to a Target (Pan / Tilt) and adjust a Mask size (Zoom).
- After editing a mask, you can re-size width & height using joystick [▶]. (e.g. ~5X)
- Set display On to display saved mask.
- It is possible to clear saved zone No.xx individually.
- Press [Open] button or use joystick to save settings.
- Press [Close] button or use joystick to return to previous menu (Back).

3.4.4 Image Setup



This menu is for changing displayed image settings.
- Enter into {Main Menu}
- Select {Display} and move to {Image Setup} using joystick[▶].
- Using joystick [▶], Normal image, Horizontal image, Vertical image or H / V image can be selected.
- Press [Open] button or use joystick to save settings.
- Press [Close] button or use joystick to return to previous menu (Back).

3.4.5 MD(Motion Detection)



The dome camera can monitor the movement of image, and it sends an alarm message with OSD and Alarm Out action. The level for sensitivity can be changeable.

*** Note:** To stop alarming temporarily (about 10sec), press [ESC] button or [96+preset].

- Set sensitivity for 0~100. The higher value, the more sensitive.
- Set alarm mode for OSD/Alarm out/Both using joystick.
- Press [Open] button or use joystick to save settings.
- Press [Close] button or use joystick to return to previous menu (Back).

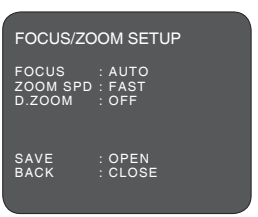
3.4.6 Resolution Setup

The dome camera can be rebooted by resolution set.
ex)1080p30,720p60,720p30 -> 1080p25,720p50,720p25 : Dome camera is rebooted.
1080p30 -> 720p60 , 1080p25->720p50 : Dome camera isn't rebooted.
- Set a Resolution using the joystick [▶].
- Press [Open] button or use joystick to save settings.
- Press [Close] button or use joystick to return to previous menu (Back).

3.5 Camera Setup Menu

▲ / ▼: move joystick up and down for selecting an item.
◀ / ▶: move joystick left and right for moving an item.
▶ / [Open] / [Near]: move joystick right to select or save settings or go to edit pages.
▶ / [Close] / [Far]: move joystick to cancel or to exit current menu (Back).

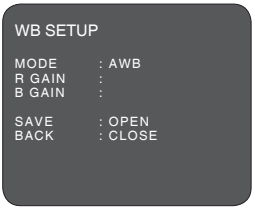
3.5.1 Focus / Zoom



Auto Focus allows the lens to remain in focus during zoom-in, zoom-out and motion functions automatically.
Zoom speed allows the user to define how fast the dome will go from full wide zoom to the 12X optical zoom. There are four modes (Slow, Normal and Fast).
And the default setting is 'Fast'.
D.Zoom allows the user to use Digital Zoom. Default setting is Optical Zoom without Digital Zoom.

- Enter into {Main Menu}
- Select {Camera Setup} and move to {Focus/Zoom} using joystick[▶].
- Set Focus mode for Auto or Manual.
- Set Zoom Speed for Fast, Normal or Slow.
- Select On / Off to set a status of D.Zoom.
- Press [Open] button or use joystick to save settings.
- Press [Close] button or use joystick to return to previous menu (Back).

3.5.2 WB Setup (White Balance Setup)

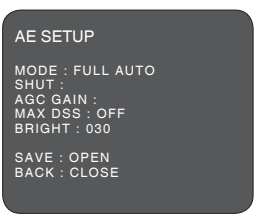


This feature automatically processes the viewed image to retain color balance over a color temperature range.
In Manual mode, you can change the R or B gain value to adjust the color on a monitor.

* Auto Trace White balance (ATW): It aligns the white balance automatically. (2,300 to 11,000 K)
* Indoor : 3200K Base Mode. Red and Blue gain value can be set by user, 0~255.
* Outdoor : 5400K Base Mode. Red and Blue gain value can be set by user, 0~255.
* Push WB mode: The white balance is aligned during key input. (White balance push auto key)
* Auto White Balance mode (AWB): Wide range auto white balance mode. In this mode, the white balance is performed at a faster operating speed than ATW.

- Enter into {Main Manu}
- Select {Camera Setup} and move to {WB Setup} using joystick[▶].
- Set WB mode for ATW, Indoor, Outdoor, Onepush or AWB.
- Press [Open] button or use joystick to save settings.
- Press [Close] button or use joystick to return to previous menu (Back).

3.5.3 AE Setup (Auto Exposure Setup)



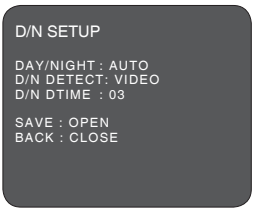
Sharpness enhances picture detail by increasing the aperture gain of the camera and sharpening the edges in the picture.

When both high-brightness subjects and low-brightness subjects have been shot at the same time, overexposure in the high-brightness subjects or loss of dark detail in the low-brightness subjects may occur.
The WDR (Wide Dynamic Range) function creates images free from overexposure or loss of dark detail by combining two images after tripping the shutter for a long exposure time and for a short exposure time in one field.(One mode can be selected from BLC / WDR / HSBLC / DNR)
- Enter into {Main Manu}.
- Select {Camera Setup} and move to {AE Setup} using joystick[▶].
- Set AE mode for Full Auto, Manual, Shutter PRI.
- Press [Open] button or use joystick to save settings.
- Press [Close] button or use joystick to return to previous menu (Back).

AE Mode	Full Auto	Manual	SHUT FIX
Shutter(Auto, X2 ~ X64, 1/30(1/25)~1/10000)	X	O (Auto)	O (Auto)
AGC Gain(OFF, Low / Mid / High)	X	O (Mid)	X
DSS(OFF, X2 ~ X64)	O (x2)	X	X
Bright(0~100)	O (30)	O (30)	O (30)

3.5.4 Day & Night Setup

The Day & Night function improves the camera's sensitivity at night or when the brightness level of the ambient environment. According to the luminance level, Day & Night filter is automatically switched.

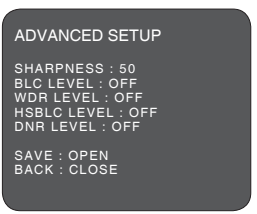


- Enter into {Main Manu}
- Select {Camera Setup} and move to {Day / Night Setup} using joystick [▶].
- Set Day / Night for Auto, Day or Night.
- Set D&N Detector for Sensor, Video or EXT.
- Set switching time that you want.
- Press [Open] button or use joystick to save settings.
- Press [Close] button or use joystick to return to previous menu (Back)

*** Notice**:
If you connect Digital Input signal (High or Low) to the terminal of AL3 and set EXT in this menu, you can use EXT D/N instead of Alarm Input. [Refer to 3.11 Alarm Menu]

3.5.5 Advanced Setup

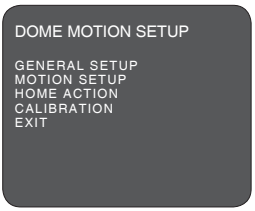
Sharpness enhances picture detail by increasing the aperture gain of the camera and sharpening the edges in the picture.



When both high-brightness subjects and low-brightness subjects have been shot at the same time, overexposure in the high-brightness subjects or loss of dark detail in the low-brightness subjects may occur.
The WDR (Wide Dynamic Range) function creates images free from over-exposure or loss of dark detail by combining two images after tripping the shutter for a long exposure time and for a short exposure time in one field.(One mode can be selected from BLC /WDR / HSBLC / DNR)

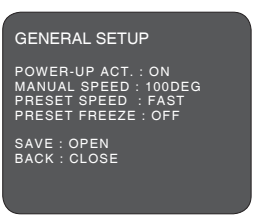
- Enter into {Main Manu}
- Select {Camera Setup} and move to {Advanced} using joystick [▶].
- Set WDR for On / Off and a level in 'On' mode.
- Set other mode for On / Off and a level in 'On' mode in the same way.
- Press [Open] button or use joystick to save settings.
- Press [Close] button or use joystick to return to previous menu (Back).

3.6 Dome Motion Menu



▲ / ▼: move joystick up and down for selecting an item.
◀ / ▶: move joystick left and right for moving an item.
▶ / [Open] / [Near]: move joystick right to select or save settings or go to edit pages.
▶ / [Close] / [Far]: move joystick to cancel or to exit current menu (Back).

3.6.1 General Setup



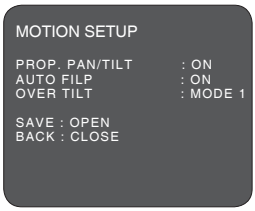
This menu control general function of dome.
Power-up Action is a function (preset, tour, pattern and scan) to be performed when the power is re-cycled or after alarm action. The following settings are available. Set the dome 'On' to resume its prior activity.(Recommended)
- Use the joystick [▶] to select On/Off

You can change pan/tilt speed for manual operation with the manual speed item.
- Use the joystick [>] to select speed between 100degree/sec and 20degree/sec.

Preset Speed is possible to set preset speed with 3 options. : Fast, Normal, and Slow.
- Use the joystick [▶] to select {Preset Speed}

Preset freeze is a function to freeze the image while moving to specific preset from the view you watch out.
- Use the joystick[>] to select On/Off
- Press [Open] button or use joystick to save settings.
- Press [Close] button or use joystick to return to previous menu (Back).

3.6.2 Motion Setup



Proportional Pan / Tilt is possible to set manual speed with Zoom
- Use the joystick [▶] to select On/Off

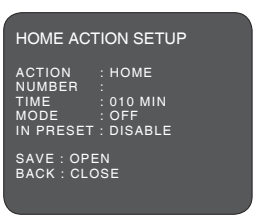
Auto-Flip is a function automatically reversing the image when zoom module camera passes through the top of tilt direction (90 degree)

When tilt angle arrives at the top of tilt orbit (90degree), zoom camera module keep moving to opposite direction of tilt to keep tracking targets. As soon as zoom camera module passes through the top of tilt direction (90degree), image should be reversed automatically.
- Use the joystick [▶] to select On / Off

Over-Tilt is for restricting vertical view angle related to the operation range of IR sensor and some blocking view angle mechanically.

To prevent horizontal view cut with tilt angle(with window bubble), it is to restrict vertical view angle in each mode.
- Use the joystick [▶] to select Mode 0 / Mode 1 / Mode 2

3.6.3 Home Action Setup

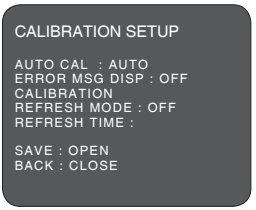


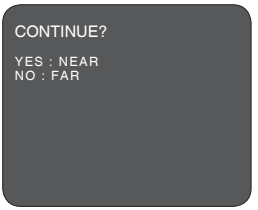
Home Action can be set so that the dome automatically goes to a preset, a tour or auto scan after the joystick control has been idle for some amount of time.
The dwell time can be set from 1 minute to 60 minutes.

- Using the joystick [▶], {Home Action} can be selected to Home, Preset, Scan and Tour.
- {Number} is the number of {Action}. For example, {Action: Preset/Number: 001} mean Preset [1]
- Set {Time} xx min using the joystick [▶].
- Using the joystick [▶] to select Auto(On) / Manual (Off).
- If you want to do the funtion in excuting preset, you can set enable.
- Press [Open] button or use joystick to save settings.
- Press [Close] button or use joystick to return to previous menu {Dome Motion Setup} (Back).

*** Note**: In order to call an action (Preset, Pattern, Tour or Scan), you must save Preset, Pattern, Tour, or Scan first.

3.6.4 Calibration Setup

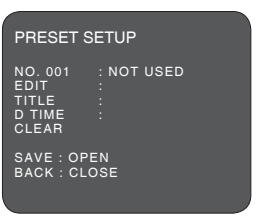




- Set calibration mode for Manual / Auto using the joystick [▶].
- In manual mode, select {Calibration} to execute {Calibration} using the joystick[▶], and press [Near] button or use joystick to continue.
- Set {Error Message Display} for On / Off using the joystick [▶]. Refresh is a function that calibrates P/T/Z regularly.
- Using the joystick [>] to select on/off
- Using the joystick [>] to select time from 3 hours to 7 days every 3 hours.
- Press [Open] button or use joystick to save settings.
- Press [Close] button or use joystick to return to previous menu (Back).

*** Note**: {Calibration} is a function for correcting an error on the angle of Pan / Tilt automatically. {Calibration} can be set for Manual/Auto. In Manual mode, if there is an error on the angle of the dome, execute {Calibration} using the joystick [▶]. Press [Near] button to continue calibration or press [Far] button to cancel calibration.In Auto mode, when there is an error on the angle of the dome, the dome is corrected automatically. The motor of the Pan / Tilt will adjust its angle automatically. {Error Message Display} is a function for displaying an error message to let a user know {Sensing error} on the monitor.

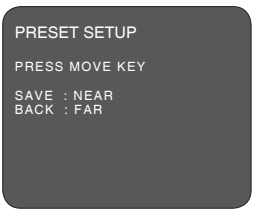
3.7 Preset Menu



▲ / ▼: move joystick up and down for selecting an item.
◀ / ▶: move joystick left and right for moving an item.
▶ / [Open] / [Near]: move joystick right to select or save settings or go to edit pages.
▶ / [Close] / [Far]: move joystick to cancel or to exit current menu (Back).

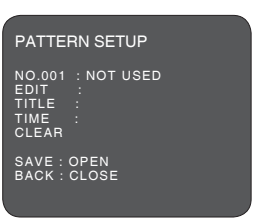
3. Program and Operation

The dome has maximum 210 preset positions. Each of the user-defined presets includes Pan / Tilt / Zoom. Use the following steps to program {Preset}.



- Enter into {Main Manu}
- Select {Preset} and Move left or right to select Preset Number.
- Move the joystick right [▶] to edit a {Preset}
- Using the joystick, move to a desired target (Pan / Tilt / Zoom)
- Press [Near] button or use joystick to save settings.
- Press [Far] button or use joystick to return to previous menu {Preset Edit} (Back).
- To edit and clear the {Preset Title}, refer to Editing a Title section (3.2.1).
- It is possible to clear saved Preset No.xxx in the {Preset Setup Menu} individually.
- Set {Dwell Time} using the joystick [▶]
- Press [Open] button or use joystick to save settings.
- Press [Close] button or use joystick to return to previous menu (Back).

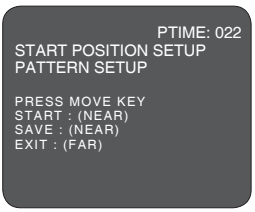
3.8 Pattern Menu



▲ / ▼: move joystick up and down for selecting an item.
◀ / ▶: move joystick left and right for moving an item.
▶ / [Open] / [Near]: move joystick right to select or save settings or go to edit pages.
▶ / [Close] / [Far]: move joystick to cancel or to exit current menu (Back).

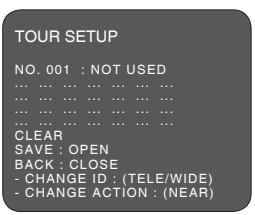
A {Pattern} is to display (or recall) a memorized, repeated and serial trace of pan, tilt, zoom. The dome has maximum 8 {Patterns}. Each of the user-defined scans includes Pan / Tilt / Zoom.

Use the following steps to program {Pattern}.



- Enter into {Main Manu}
- Select {Auto Scan} and move left or right to select {Pattern} Number.
- Move the joystick right [▶] to edit {Pattern}
- Using the joystick, move to a desired target and press [Near] button to start programming {Pattern}
- Press [Near] button or use joystick to save settings.
- Press [Far] button or use joystick to return to previous menu {Pattern Setup} (Back).
- To edit and clear {Pattern Title}, refer to Editing a Title section (3.2.1).
- It is possible to clear saved Pattern No.xxx in the {Pattern setup} Menu individually.
- Press [Open] button or use joystick to save settings.
- Press [Close] or use joystick to return to previous menu (Back).

3.9 Tour Menu



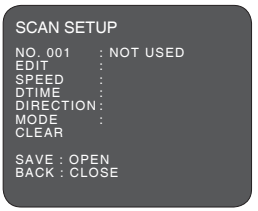
▲ / ▼: move joystick up and down for selecting an item.
◀ / ▶: move joystick left and right for moving an item.
▶ / [Open] / [Near]: move joystick right to select or save settings or go to edit pages.
▶ / [Close] / [Far]: move joystick to cancel or to exit current menu (Back).

The dome can have 8 {Group Tours}. And each of the tour has 28 items.
Each item has pre-defined preset, pattern, and scan.

*** Notice**: In order to call an action (Preset, Pattern or Scan), you must save Preset, Pattern, or Scan first.

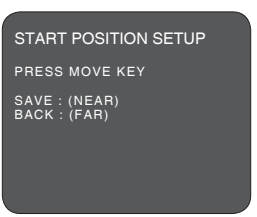
- Enter into {Main Manu}
- Select {Tour} and Move left or right to select {Tour} Number.
- Using the joystick [▲ / ▼ / ◀ / ▶], move to each item.
- Select an action/number (PRESET, TOUR, PATTERN and / or SCAN), with [Tele] button or clear item with [Wide] button and change mode using [Near] button.
- It is possible to clear saved Tour No.xxx in the {Tour Setup Menu} individually.
- Press [Open] button or use joystick to save settings.
- Press [Close] button or use joystick to return to previous menu (Back).

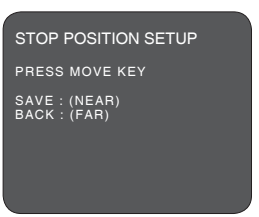
3.10 Auto Scan Menu



▲ / ▼: move joystick up and down for selecting an item.
◄ / ►: move joystick left and right for moving an item.
► / [Open] / [Near]: move joystick right to select or save settings or go to edit pages.
► / [Close] / [Far]: move joystick to cancel or to exit current menu (Back).

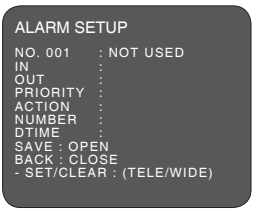
An {Auto scan} is a PTZ function that can be moved from one position to another position.
The dome has maximum 8 {Auto Scan} and {Scan Speed} can be changed from 1 to 35 degree / sec. Use the following steps to program a {Auto Scan}.





- Enter into {Main Manu}
- Select {Auto Scan} and move left or right to select {Auto Scan} Number.
- Move the joystick right [►] to edit {Auto Scan}: {Edit Start Point} / {Edit Stop Point}
- Using the joystick, move to a desired target (Pan / Tilt / Zoom) at screen of {Edit Start Point} / {Edit Stop Point}
- Press [Near] button or use joystick to save settings.
- Press [Far] button or use joystick to return to previous menu {Scan Setup} (Back).
- To edit and clear the {Scan Title}, refer to Editing a Title section (3.2.1).
- It is possible to clear saved Scan No.xxx in the {Scan setup} Menu individually.
- Set {Dwell Time} using the joystick [►].
- Press [Open] button or use joystick [►] to save settings.
- Press [Close] button or use joystick to return to previous menu (Back).

3.11 Alarm Menu



▲ / ▼: move joystick up and down for selecting an item.
◀ / ▶: move joystick left and right for moving an item.
▶ / [Open] / [Near]: move joystick right to select or save settings or go to edit pages.
▶ / [Close] / [Far]: move joystick to cancel or to exit current menu (Back).

- Enter into {Main Menu}
- Using the joystick [▶], select Alarm Input type (NO / NC).
- Using the joystick [▶], select Alarm Output (On / Off)
- Alarm priority can be set using the joystick [▶],
  Change an action / number {Off, Preset, Pattern, Scan, or Tour}.
- Set Alarm action time (Dwell Time): 3~60sec / On, default setting is 'ON'.
  -> Time Out (3~60sec): This is activated during a period of a selected dwell time when an alarm is triggered.
  -> Momentary (On): When an alarm is triggered, the dome camera will maintain alarm activation continuously, until it is stopped manually (96+preset or / and changing in alarm menu).
- It is possible to clear saved {Alarm No.xxx}, pressing [Wide] button at a position of {No.xxx} individually.
- Press [Open] button or use joystick [▶] to save settings.
- Press [Close] button or use joystick to return to previous menu (Back).

*** Notice**:
In order to call an action (Preset, Pattern, Tour or Scan), you must save Preset, Pattern, Tour, or Scan first. To pause alarming (about 10sec) temporarily, press [ESC] button or [96+preset].

*** Notice**:
The dome camera normally supports 4 Alarm Input (AL0~3). But AL3 can be used as Digital input for External D/N, so, in this case, Only AL0~2 are available for Alarm inputs.

4. Troubleshooting Guide

If problems occur, check the installation of the dome with the instructions in this manual.
And refer to this manual for further information.

Problem	Solution
No video on the screen	- Verify that power is connected to all components in the system. - Verify that the power switches are ON. - Verify the status of cables or connection of cables
Poor video quality.	- Check the power supply voltage (normal 24VAC) - Check the setting of camera. - If the lens or the dome is dirty, clean up the dome windows with a clean cloth.
Dome camera is not working properly (including wrong position of dome camera)	- Re-cycle the power supply re-connecting the power code. Or reset the dome camera using the Dome configuration menus. [Main > System > Reboot] - Check that the connection of power cable and assembling status of dome camera. - Initialize the dome camera. [Main > System > Initialize]
The communication between controller and cameras is not working properly. (via 485 cable lines)	- Check that RS-485 communication cable is not connected correctly. [Refer to 2.3 Connection Interface and Wire cables] - Check ID/Protocol/Baud rate / Termination Setting. [2.4 Setting Dome Camera] - See the configure of [1.3 Termination Settings]
The surface of the dome case is hot.	- Check the voltage level of the dome camera and the assembling status of dome camera. - Check that the dome camera is connected to the proper power.
The image on the screen is flickers	- Does the camera face directly into the sun or fluorescent lamp? If so, reposition the dome. Check for flicker-less setting of the dome.
The PTZ is calibrated without user control.	- The PTZ will be back on the original position as tuned after 12 hours automatically - It will prevent an errors by unexpected shock.

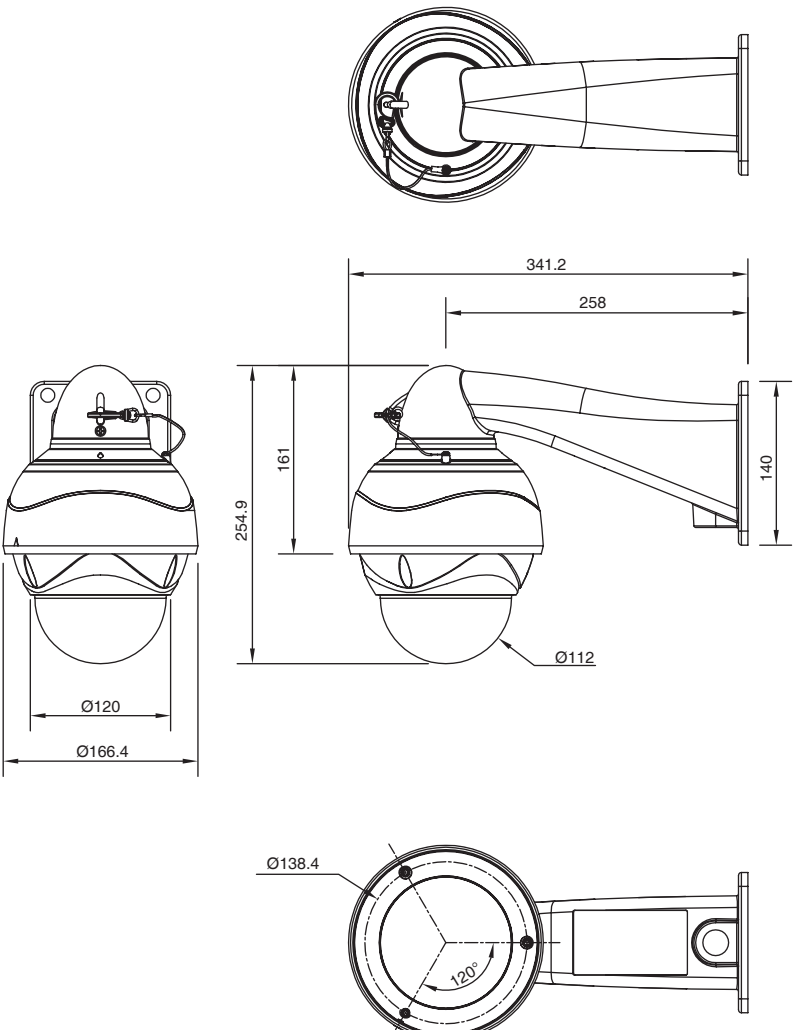
5. Specifications

Image Device	1/3" CMOS
Effective Pixels	About 2.1Mega Pixel
Video Signal	HD: 1920*1080(Full HD, 1080p @30fps,25fps) 1280*720(HD, 720p @60fps,50fps,30fps,25fps)
	SD: NTSC, PAL
Lens	12X Optical /10X Digital Zoom (Auto Focus)
View Angle Approx.	Approx.52.4° (Wide end) to 4.64° (Tele end)
Min. illumination	0.1 Lux
WDR	On / Off
DNR	3DNR
Privacy Masking	Max. 8 zones
Video Output	HD-SDI, CVBS Output
Electrical	
Power Supply	AC24V (±10%) Normal, Built-in Power Line Surge
Power Requirement	AC24VAC, 48W (with Heater)
Power Consumption	Maximum 25W (without Heater)
Alarm Output	1 Normal Relays 12VDC / 500mA Max (Selectable NC / NO)
Alarm Input	4 Normal Dry Contact (Selectable NC / NO)
Control	RS-485 baud rate: 2400~38.4Kbps (default: 2400bps)
Access Time	0.75 second maximum preset recall time
ID (Camera Address)	Physical 255
Mechanical	
Weight	3.5kg (with wall mount)
Dimension	Ø166 x 341mm x 255mm (Bubble Dome Ø112)
Pan Angle	360° Continuous rotation
Tilt Range	0 ~ 180°
Speed	Maximum Preset Speed: 360°/sec
Flip	Rotate 180° at bottom of tilt
Auto Scan	8 Auto Scan include vector scan
Preset Position	210 Position with camera status
Tour	8 Tour (Preset, Pattern, Scan)
Pattern	6 Pattern
On Screen Display	Display camera ID, Title, Mode, and Angle on screen(Multi-Language)
Multi-language OSD	English, Chinese, Russian, Spanish, German, Italian, French, Netherlandish
Environment	
Certification	CE / FCC / IP66 / HDcctv Alliance Base-Line Compliance
Operating Temperature	14°F ~ 122°F(-10 ~ +50°C)
	Heater On: -4°F ~ 122°F(-20°C ~ +50°C)
Heater(Bult-in)	On / Off: 0~10°C
Operating Humidity	80% RH
Storage Temperature	-4°F ~ 140°F(-20°C ~ 60°C / ~90%)
IP Rating	IP66 (Weatherproof)

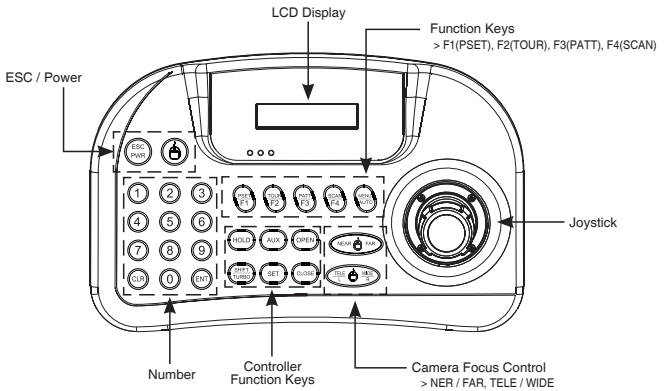
Specifications and designs are subject to change for improving the functionality of this product without notice.

6. Dimensions

[Unit: mm]



APPENDIX. Pelco Protocol function List



Based on WTX1200A

Function	Key	Preset No.	Operation	e.g. 1	e.g. 2
Preset	Preset	1~59, 101~253	No.+Preset	1+Preset	-
Preset Shortcut Saving	* Preset	1~59, 101~253	*	*	-
Run PAN	Preset	33	No.+Preset	33+Preset	-
Run PAN Zero	Preset	34	No.+Preset	34+Preset	-
Scan Setup	Preset	60	No.+Preset	60+Preset	-
Scan	Preset / Scan	61~68	No.+Preset	61+Preset	1+Scan
Tour Setup	Preset	70	No.+Preset	70+Preset	-
Tour	Preset / Tour	71~78	No.+Preset	71+Preset	1+Tour
Pattern Setup	Preset	80	No.+Preset	80+Preset	-
Pattern	Preset / Pattern	81~88	No.+Preset	81+Preset	1+Pattern
Menu Key	Preset / **Menu	95	No.+Preset	95+Preset	**Menu
ESC Key	Preset	96	No.+Preset	96+Preset	-
D. Zoom (Toggle)	Preset	97	No.+Preset	97+Preset	-

*** Note**:
- To save position of the dome, Press desired number of preset and hold [PRESET] key for 2 seconds.
- To go to OSD Main Menu, Press and hold [MENU] key for 2 seconds.

Camera ID Chart

ID	S301	S302	ID	S301	S302	ID	S301	S302	ID	S301	S302	ID	S301	S302
1	0	1	52	3	4	103	6	7	154	9	A	205	C	D
2	0	2	53	3	5	104	6	8	155	9	B	206	C	E
3	0	3	54	3	6	105	6	9	156	9	C	207	C	F
4	0	4	55	3	7	106	6	A	157	9	D	208	D	0
5	0	5	56	3	8	107	6	B	158	9	E	209	D	1
6	0	6	57	3	9	108	6	C	159	9	F	210	D	2
7	0	7	58	3	A	109	6	D	160	A	0	211	D	3
8	0	8	59	3	B	110	6	E	161	A	1	212	D	4
9	0	9	60	3	C	111	6	F	162	A	2	213	D	5
10	0	A	61	3	D	112	7	0	163	A	3	214	D	6
11	0	B	62	3	E	113	7	1	164	A	4	215	D	7
12	0	C	63	3	F	114	7	2	165	A	5	216	D	8
13	0	D	64	4	0	115	7	3	166	A	6	217	D	9
14	0	E	65	4	1	116	7	4	167	A	7	218	D	A
15	0	F	66	4	2	117	7	5	168	A	8	219	D	B
16	1	0	67	4	3	118	7	6	169	A	9	220	D	C
17	1	1	68	4	4	119	7	7	170	A	A	221	D	D
18	1	2	69	4	5	120	7	8	171	A	B	222	D	E
19	1	3	70	4	6	121	7	9	172	A	C	223	D	F
20	1	4	71	4	7	122	7	A	173	A	D	224	E	0
21	1	5	72	4	8	123	7	B	174	A	E	225	E	1
22	1	6	73	4	9	124	7	C	175	A	F	226	E	2
23	1	7	74	4	A	125	7	D	176	B	0	227	E	3
24	1	8	75	4	B	126	7	E	177	B	1	228	E	4
25	1	9	76	4	C	127	7	F	178	B	2	229	E	5
26	1	A	77	4	D	128	8	0	179	B	3	230	E	6
27	1	B	78	4	E	129	8	1	180	B	4	231	E	7
28	1	C	79	4	F	130	8	2	181	B	5	232	E	8
29	1	D	80	5	0	131	8	3	182	B	6	233	E	9
30	1	E	81	5	1	132	8	4	183	B	7	234	E	A
31	1	F	82	5	2	133	8	5	184	B	8	235	E	B
32	2	0	83	5	3	134	8	6	185	B	9	236	E	C
33	2	1	84	5	4	135	8	7	186	B	A	237	E	D
34	2	2	85	5	5	136	8	8	187	B	B	238	E	E
35	2	3	86	5	6	137	8	9	188	B	C	239	E	F
36	2	4	87	5	7	138	8	A	189	B	D	240	F	0
37	2	5	88	5	8	139	8	B	190	B	E	241	F	1
38	2	6	89	5	9	140	8	C	191	B	F	242	F	2
39	2	7	90	5	A	141	8	D	192	C	0	243	F	3
40	2	8	91	5	B	142	8	E	193	C	1	244	F	4
41	2	9	92	5	C	143	8	F	194	C	2	245	F	5
42	2	A	93	5	D	144	9	0	195	C	3	246	F	6
43	2	B	94	5	E	145	9	1	196	C	4	247	F	7
44	2	C	95	5	F	146	9	2	197	C	5	248	F	8
45	2	D	96	6	0	147	9	3	198	C	6	249	F	9
46	2	E	97	6	1	148	9	4	199	C	7	250	F	A
47	2	F	98	6	2	149	9	5	200	C	8	251	F	B
48	3	0	99	6	3	150	9	6	201	C	9	252	F	C
49	3	1	100	6	4	151	9	7	202	C	A	253	F	D
50	3	2	101	6	5	152	9	8	203	C	B	254	F	E
51	3	3	102	6	6	153	9	9	204	C	C	255	F	F